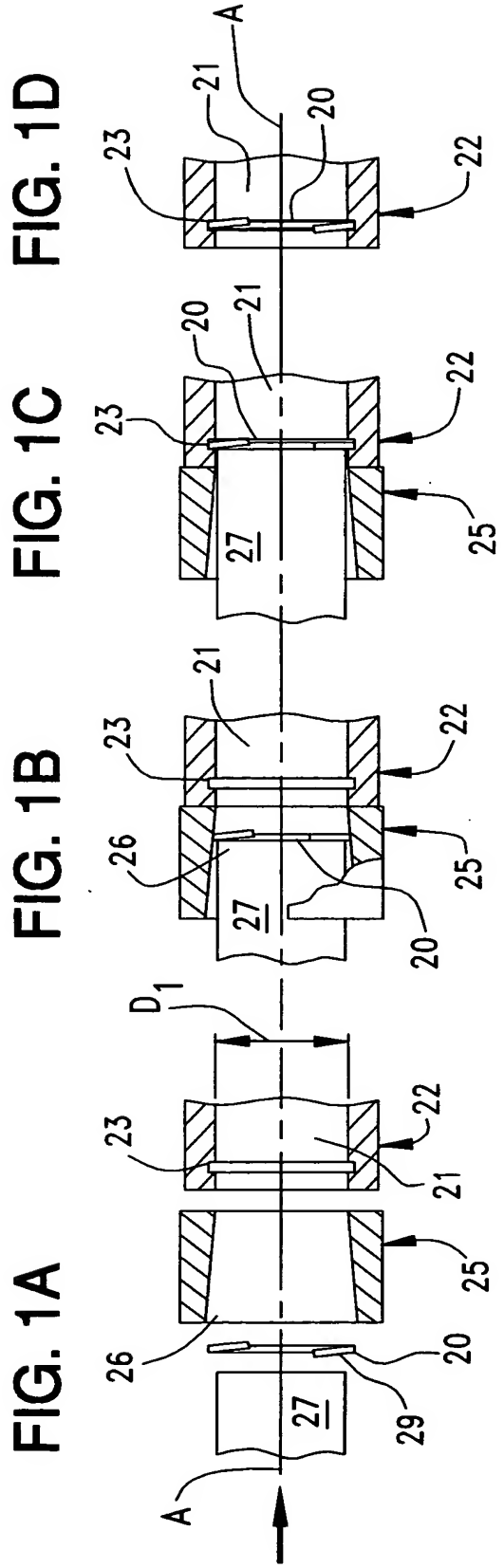

FIG. 1A FIG. 1B FIG. 1C FIG. 1D

PRIOR ART

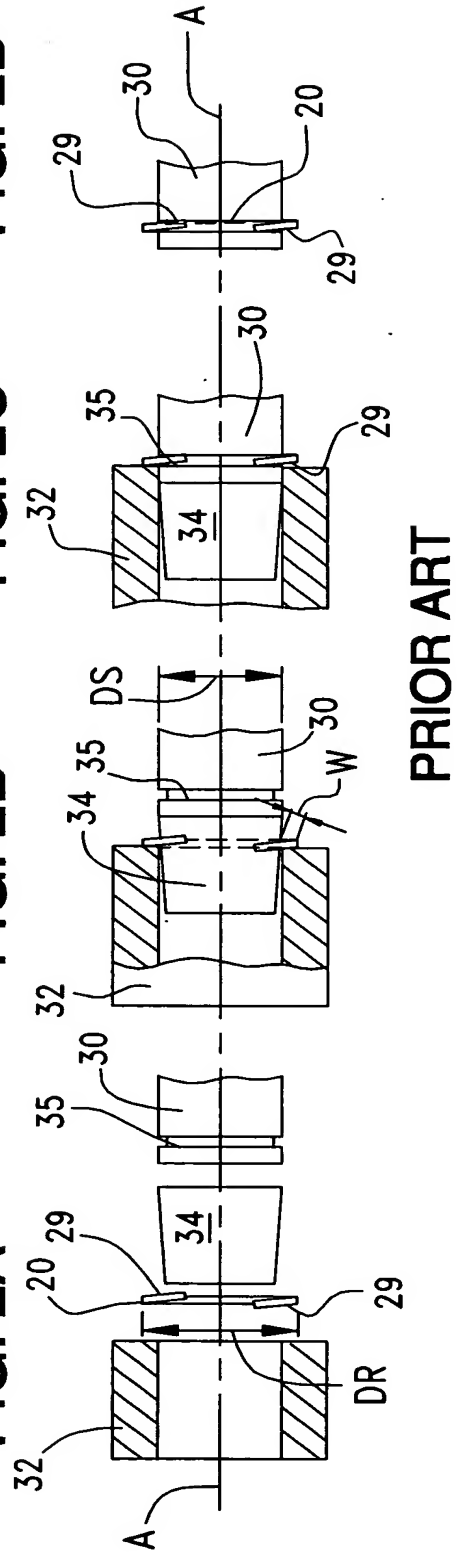

FIG. 2A FIG. 2B FIG. 2C FIG. 2D

PRIOR ART

FIG. 3

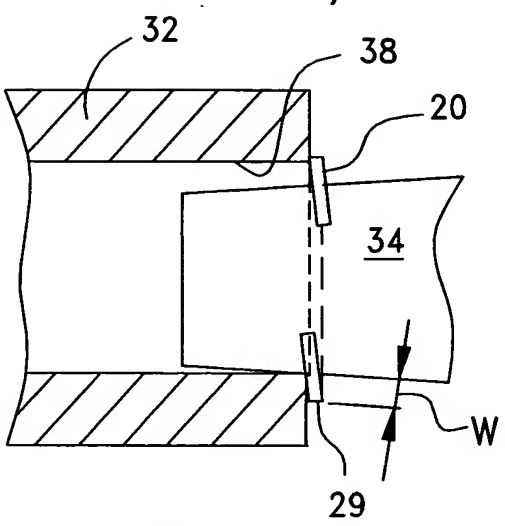

FIG. 4

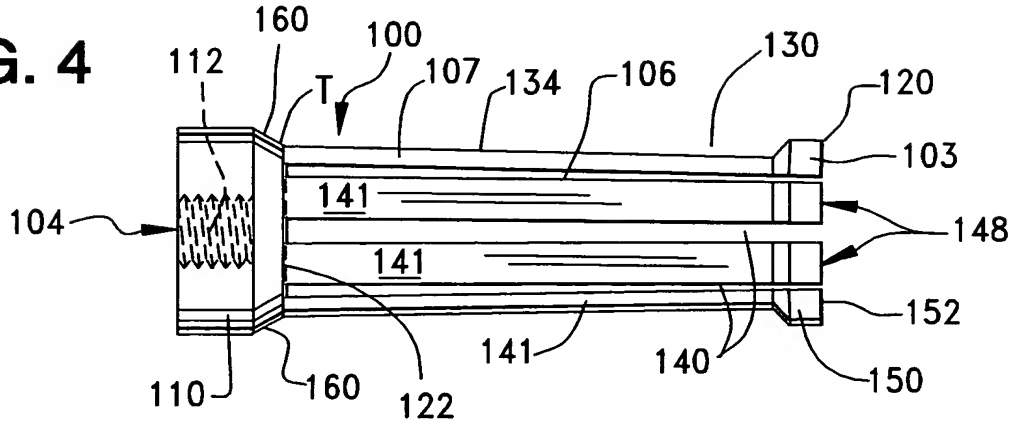

FIG. 5

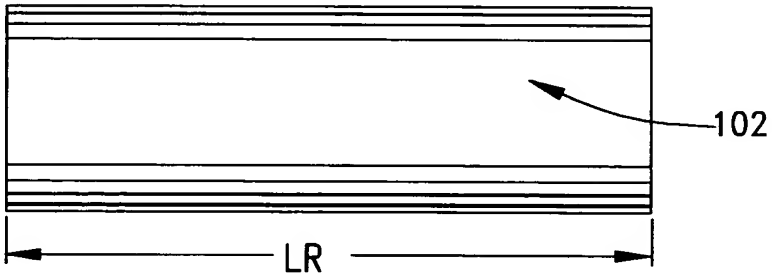

FIG. 6

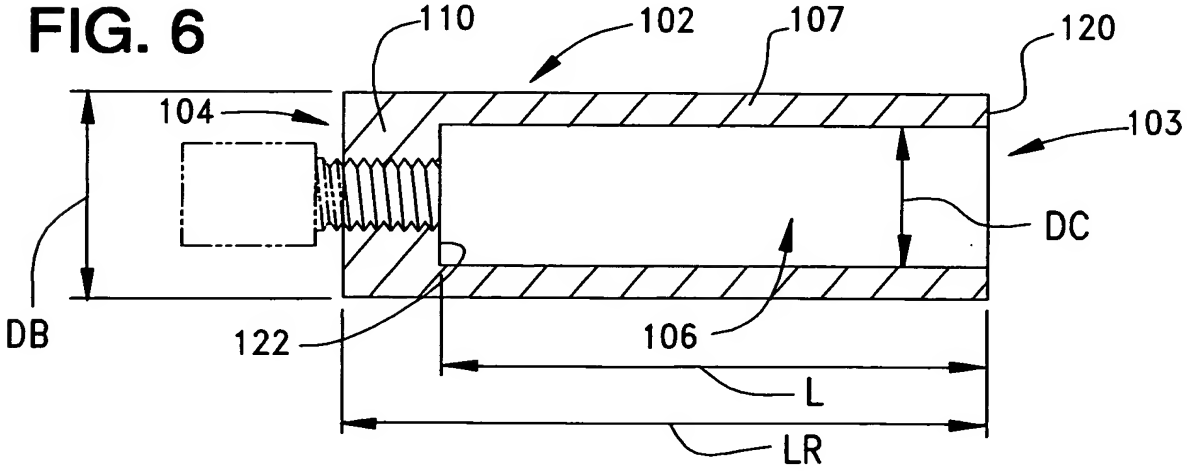

FIG. 7

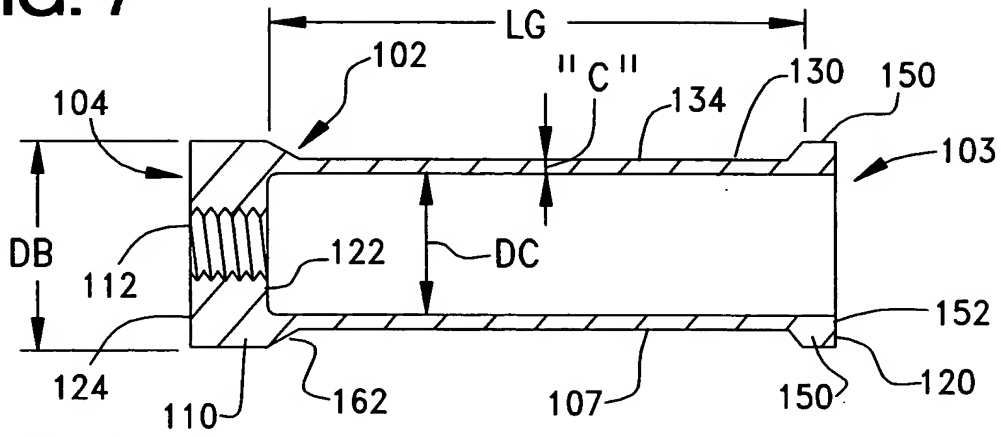

FIG. 8

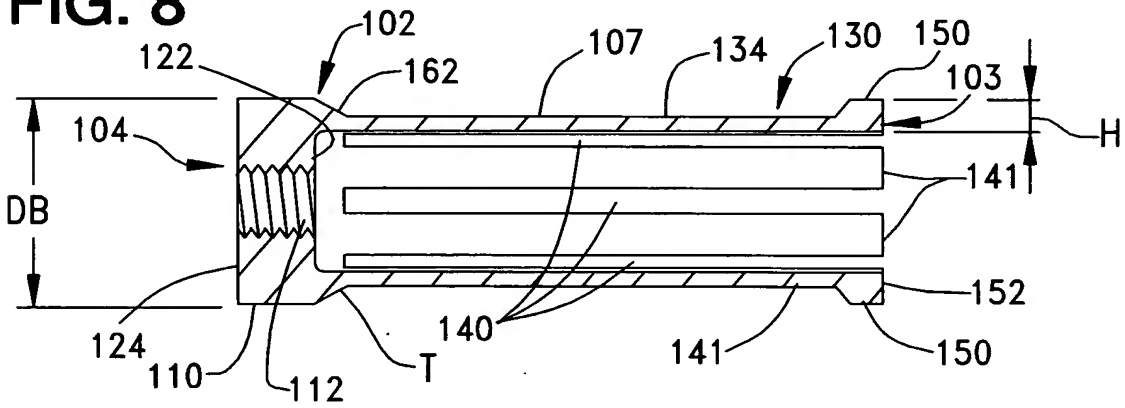

FIG. 9A

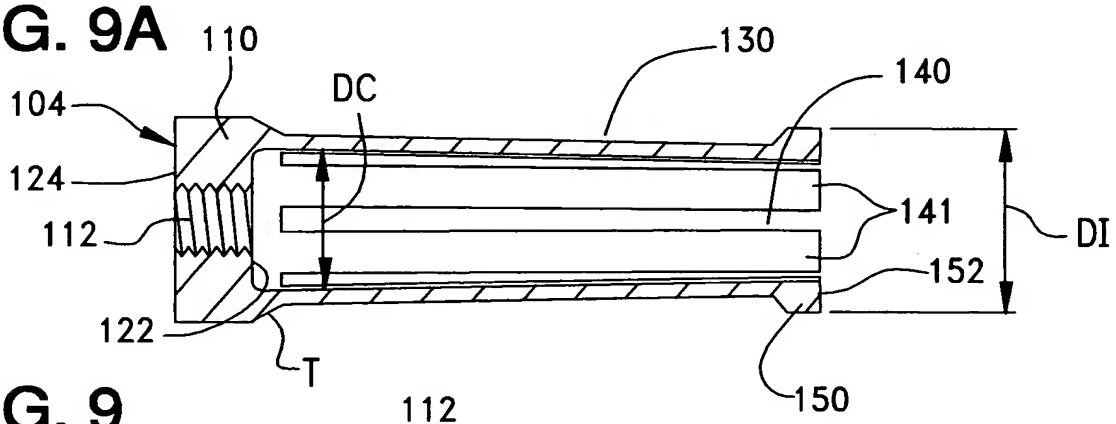

FIG. 9

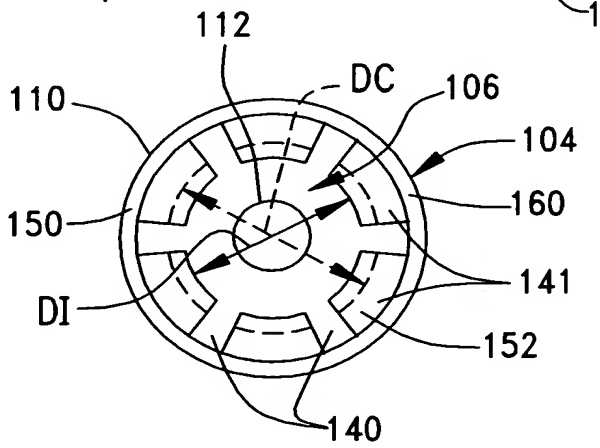

FIG. 10

Axial Load Required for Ring Installation Using 5°Taper (Bore)

Smalley P/N	Catalog Free O.D.	Tolerance	Bore Dia	Taper	Nom X	Max X	Measured Free O.D	Avg Load
VH 50	0.531	+.013/-.000	0.500	5	0.177	0.103	0.535	8
WH 50	0.532	+.013/-.000	0.500	5	0.183	0.257	0.538	9
WHT 50	0.529	+.013/-.000	0.500	5	0.166	0.240	0.534	12
WHM 50	0.538	+.013/-.000	0.500	5	0.217	0.291	0.543	16
VH 75	0.783	+.013/-.000	0.750	5	0.189	0.263	0.787	5
WH 75	0.790	+.013/-.000	0.750	5	0.229	0.303	0.790	14
WHT 75	0.796	+.013/-.000	0.750	5	0.263	0.337	0.802	20
WHM 75	0.807	+.013/-.000	0.750	5	0.326	0.400	0.817	32
VH 100	1.052	+.013/-.000	1.000	5	0.297	0.371	1.054	8
WH 100	1.054	+.013/-.000	1.000	5	0.309	0.383	1.057	22
WHT 100	1.063	+.013/-.000	1.000	5	0.360	0.434	1.066	38
WHM 100	1.080	+.013/-.000	1.000	5	0.457	0.531	1.083	44
VH 150	1.559	+.015/-.000	1.500	5	0.337	0.423	1.562	8
WH 150	1.567	+.015/-.000	1.500	5	0.383	0.469	1.572	18
WHT 150	1.591	+.015/-.000	1.500	5	0.520	0.606	1.596	30
WHM 150	1.605	+.013/-.000	1.500	5	0.600	0.674	1.612	44

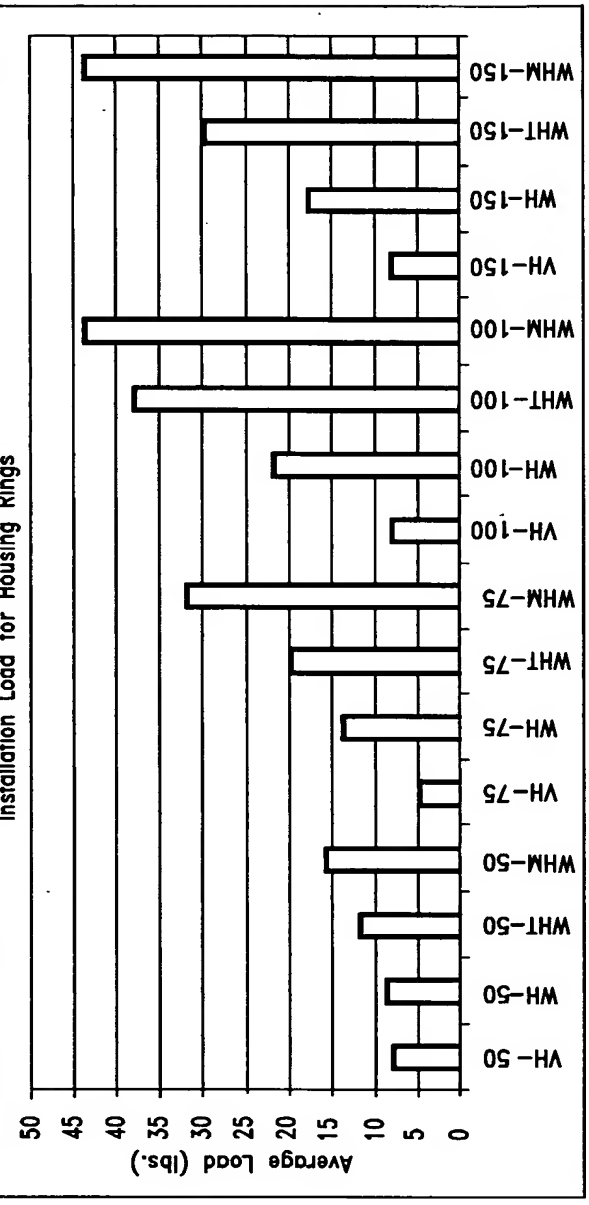

FIG. 11

Smalley P/N		Catalog Free I.D.	Tolerance	Shaft Dia	Taper	Nom X	Max X	Measured Free I.D.	Avg Load
VS	50	0.467	+.000/-.01:	0.500	5	0.189	0.263	0.458	9
WS	50	0.467	+.000/-.01:	0.500	5	0.189	0.263	0.461	11
WST	50	0.469	+.000/-.01:	0.500	5	0.177	0.251	0.467	14
WSM	50	0.464	+.000/-.01:	0.500	5	0.206	0.280	0.457	18
VS	75	0.715	+.000/-.01:	0.750	5	0.200	0.274	0.707	8
WS	75	0.710	+.000/-.01:	0.750	5	0.229	0.303	0.701	16
WST	75	0.708	+.000/-.01:	0.750	5	0.240	0.314	0.697	24
WSM	75	0.698	+.000/-.01:	0.750	5	0.297	0.371	0.687	34
VS	100	0.949	+.000/-.01:	1.000	5	0.291	0.366	0.944	8
WS	100	0.946	+.000/-.01:	1.000	5	0.309	0.383	0.941	16
WST	100	0.947	+.000/-.01:	1.000	5	0.303	0.377	0.939	20
WSM	100	0.932	+.000/-.01:	1.000	5	0.389	0.463	0.920	30
VS	150	1.442	+.000/-.01:	1.500	5	0.331	0.417	1.435	7
WS	150	1.433	+.000/-.01:	1.500	5	0.383	0.469	1.429	17
WST	150	1.419	+.000/-.01:	1.500	5	0.463	0.549	1.412	27
WSM	150	1.390	+.000/-.01:	1.500	5	0.629	0.703	1.385	46

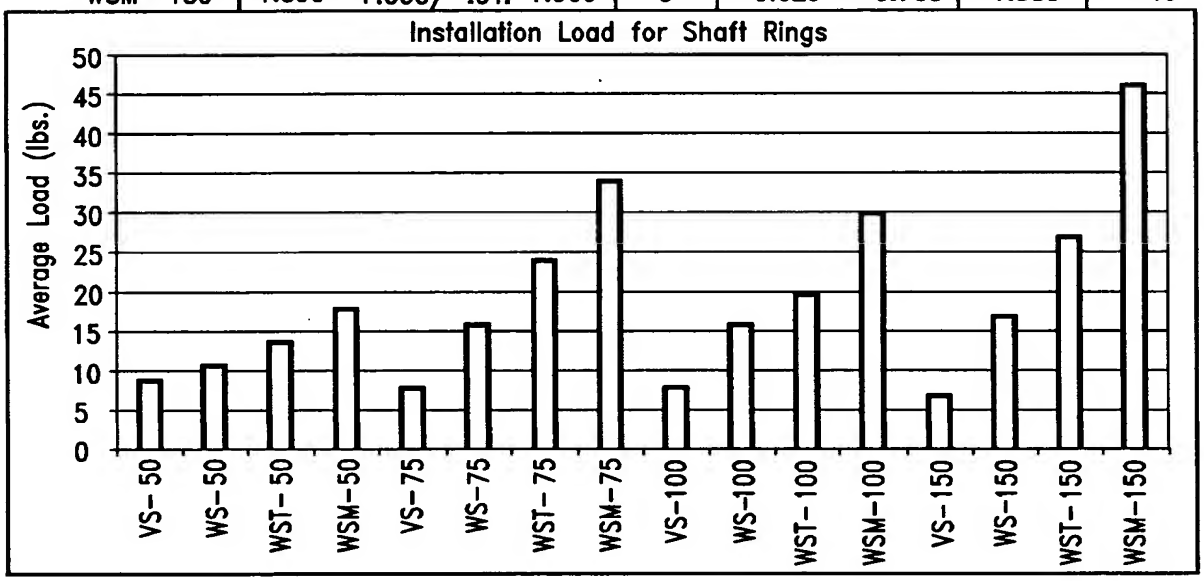
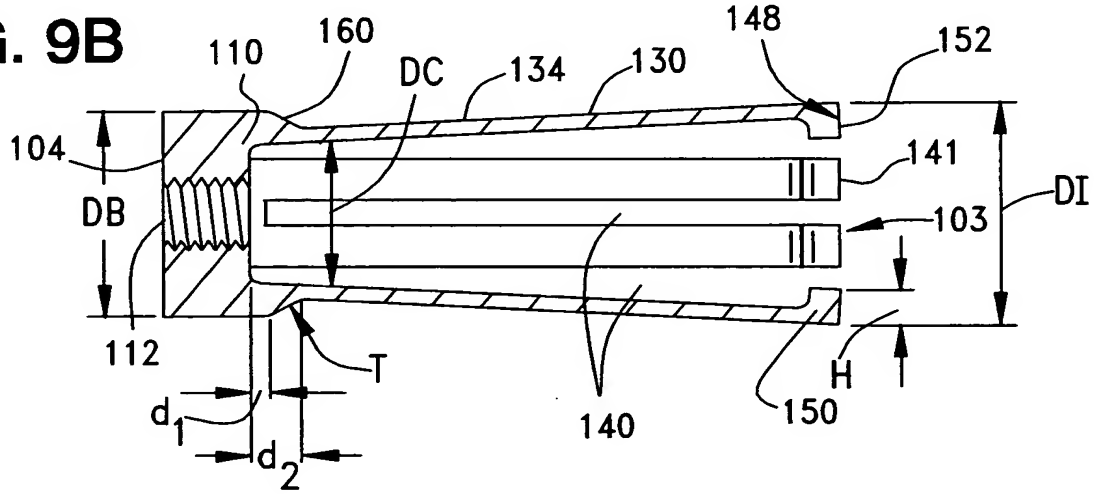
FIG. 9B